The Mountain Weather Journal

Volume 1 Issue 2

What's New at Jackson???

By: Shawn Harley

Greetings from your National Weather Service Forecast Office in Jackson, Kentucky. It has been a busy summer, and I want to bring you up to date on some recent happenings around our office. Many of you will not be surprised to learn that we have had a record number of flash floods in eastern Kentucky this year. During the many heavy rain events, we have been fortunate to have a new Flash Flood Monitoring Program (FFMP).

The FFMP software runs on our main operational computer and has been fully integrated into our forecast and warning operations this past year. FFMP produces graphics that combine stream basin mapping, radar data, and flash flood guidance (the amount of rain needed to initiate flash flooding). This allows us to quickly assess the flash flood threat for multiple locations within each county, and to reference specific creeks and streams in our flash flood warnings.

Once we issue a flash flood warning, or any other type of warning, it is automatically broadcast on the National Oceanic & Atmospheric Administration (NOAA) weather radio. If you are a frequent listener of NOAA weather radio, you may have noticed that the computer generated voice used for our broadcasts was upgraded earlier this summer. Please listen to the broadcasts and let us know what you think about the new weather radio voice. If you hear a town or county that is not pronounced correctly, let us know and we will make adjustments.

Another recent development was the implementation of the National Digitized Forecast Database (NDFD). The Jackson National Weather Service office has been a prototype NDFD site since January 2002. A national database combining forecasts from National Weather Service offices across the country first became available this summer. Specially trained forecasters at each forecast office generate the digital database after careful assessment of satellite, radar, surface and upper air data, and various computer models. The forecasts are combined into a national forecast digital database, and graphics are posted to www.nws.noaa.gov/forecasts/graphical. The digital database is also available for download by customer-partners who wish to use the forecast data for their specialized needs.

Finally, for those who may be interested in general aviation, we began producing aviation forecasts for the Julian Carroll (Jackson) Airport this past April. The forecasts are used by the FAA Flight Service Station in Louisville, and by general aviation pilots who fly over eastern Kentucky.

We would appreciate hearing from you. If you have any comments regarding the newsletter, NOAA Weather Radio, our webpage or any other service we provide, please give us a call, send us an e-mail via our webpage, or drop us a note. We are constantly striving to improve our products and services and your feedback is important.

Tech Tips

By: Peter Geogerian, General Forecaster

We are approaching that time of the year again when snow will occasionally blanket eastern Kentucky. Here are a few reminders on snow measuring accuracy. The designated area to measure snow is preferably flat, grassy area, free from obstructions. Remember to clear snowboards no more than once every six hours when taking the sum of 24 hour snowfall totals. Try to take observations at a consistent time. When drifting occurs, take an average of several measurements over the designated measuring area. For those that do not have snowboards, remember to note where the bottom of the frozen precipitation ends and the grassy surface begins. This will ensure an accurate snow depth. Finally, remember that snowfall is rounded to the nearest tenth of an inch and snow depth is rounded to the nearest whole inch.

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Weather History

By: Karen Oudeman, General Forecaster

SNOW AND COLD

January 16-19, 1994

"The worst winter storm to strike the region since the Blizzard of 1978 dumped up to an inch of ice and anywhere from 6 to 26 inches of snow. The heaviest snow fell in a 50 mile wide band from Webster County, to Jefferson County, to Harrison County and to Boyd County. Twenty-six inches of snow fell in southern Mason County, with 22 inches of snow in Maysville and Corinth. Also, 22 inches of snow fell in Cynthiana and Harrison. In Louisville, 16 inches of snow fell, which was the greatest in a 24 hour period." At the Jackson Weather Office, 15.4 inches fell, with 15.2 inches falling within a 24 hour period.

"Drifts as high as ten feet were reported in some locations. All state and federal highways were officially closed by a State of Emergency for 5 days.

"Thousands of motorists and trucks were stranded, and dozens of people had to be rescued by the National Guard. Some towns were completely cut off by the snow and were accessible only by helicopter. On the 19th record cold weather filtered into the state. At Louisville the temperature dipped to a record 22 below zero and many other locations around the state reported record cold temperatures as well." Low Temperatures included -35 at Gray Hawk, -32 at Somerset, -31 at Grayson, -25 at London and the Quicksand agricultural station near Jackson, and -18 at the Jackson National Weather Service Office. "Throughout the week, emergency personnel could only be transported by the National Guard. Mail deliveries were suspended for up to 4 days in some locations and many school districts had no classes for nine days." **-- StormData January 1994**

JANUARY 1994 WEATHER REPORTS

COUNTY	COLDEST TEMPERATURE (all reported on the 19th of the month unless otherwise noted.	# OF DAYS with high of 32° below	# OF DAYS low of 5° or below	MAX SNOW DEPTH
Jackson	-18°	13	04	17 on the 18th & 19th
London	-25°	08	05	08 on the 18th & 19th
Lexington	-20°	13	05	10 on the 18th & 19th
Barbourville	-22°	08	05	09 on the 18th
Baxter	-15°	10	04	09 on the 18th
Gray Hawk	-35°	12	08	13 on the 18th
Heielburg	-27° on the 20th	12	07	13 on the 18th & 19th
Hyden	-20° on the 20th	09	05	12 on the 19th & 20th
4W Manchester	-30°	10	08	05 on the 17th
3NE Monticello	-23°	09	05	09 on the 18th & 19th
Mt. Vernon	-24°	13	07	09 on the 18th & 19th
1E Paintsville	-26°	07	08	08 on the 16th
2N Somerset	-32°	07	07	09 on the 17th
2S Stearns	-21°	09	05	11 on the 16th
West Liberty	-30°	12	09	14 on the 18th
Williamsburg	-21°	07	06	09 on the 18th & 22nd
Buckhorn Lake	-18°	07	08	12 on the 18th & 19th
Carr Fork Lake	-18°	06	05	12 on the 18th & 19th
Skyline	-19°	07	08	10 on the 18th & 19th

The Climate Corner

By: Jeff Carico, Hydrometeorological Technician

...It was cooler and very wet during the 2003 summer season for eastern Kentucky...

The climate period of June through August had a few notable monthly events. The Jackson Weather Office had the coolest June on record as well as the third wettest June since climate records began in 1981. The cool trend continued into the next month for Jackson with July 2003 being the fifth coolest on record. The London-Corbin Airport had the wettest 2003 on record. This is a pretty noteworthy event considering that the climate records for London date back to 1954. Jackson also recorded its first 90 degree temperature of the year on August 27th. This is the latest occurrence of a 90 degree temperature in a calendar year. So far this year, London has yet to achieve a 90 degree reading. The London-Corbin Airport has reached at least 90 degrees every year except once since 1955.

The Jackson Weather office had an average temperature of 72.2 for the 3 month period of June, July and August. This is 1.2 degrees below the normal average of 73.4 degrees. The London-Corbin Airport averaged 72.3 degrees from June through August, which is 1.7 degrees below the normal average of 74.0 degrees.

Jackson totalled 16.61 inches of precipitation for June, July and August. Jackson normally receives 13.39 inches of rainfall during that 3 month period. London accumulated 21.68 inches of rain from June through August, which is an incredible 9.69 inches above normal. London normally receives 11.99 inches of precipitation during the summer season.

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OBSERVED TEMPERATURES AND PRECIPITATION: SUMMER 2003

LOCATION	MONTH	AVERAGE TEMP.	DEPARTURE FROM NORMAL	TOTAL PRECIPITATION	DEPARTURE FROM NORMAL	HIGHEST TEMP	LOWEST TEMP
JACKSON	Jun	68.2	-3.2	7.54	2.87	86 (25th)	48 (2nd)
	Jul	73.8	-1.2	3.95	-0.64	87(4th & 5th)	59 (24th & 25th)
	Aug	74.6	0.8	5.12	0.99	90 (27th)	60 (24th)
LONDON	Jun	67.9	-3.9	7.63	3.39	87 (26th)	42 (2nd)
	Jul	73.9	-2.0	6.58	2.19	89 (4th & 5th)	56 (25th)
	Aug	75.0	0.6	7.47	4.11	89 (27th & 28th)	59 (19th)

NORMAL HIGH/LOW TEMPERATURES

LOCATION	SEP	OCT	NOV	DEC
JACKSON	77.4	67.5	56.4	46.3
	58.4	47.4	38.9	30.2
LONDON	78.8	68.6	57.5	47.9
	56.9	44.3	36.2	29.1

RECORD MONTHLY HIGH/LOW TEMPERATURES

SEP	OCT	NOV	DEC
95 (1991)	86 (1991)	81 (1993)	79 (1982)
34 (1987)	26 (1987)	13 (1986)	-13 (1989)
95 (1988)	89 (1958)	82 (1977)	78 (1982)
32 (1983)	18 (1962)	2 (1976)	-17 (1962)

Winter Safety

By: Bonnie Terrizzi, Hydrometeorological Technician

Winter Weather - Why Even Talk About It?

Each year, dozens of Americans die due to exposure to cold. Add vehicle accidents and fatalities, fires due to dangerous use of heaters and other winter weather fatalities and one has a significant threat.

Injuries Due to Ice and Snow

* ***About 70% result from vehicle accidents***
* ***About 25% occur with people caught out doors***
* ***Most happen to males over 40 years old***

To minimize your chances of becoming a statistic, take a few moments of your time to become weather-wise. Before the winter season catches you unprepared, take time now to fully "winterize" your vehicles. Place an emergency survival kit in the trunk of your vehicle and make sure you plan your travel by listening to the latest weather forecast. **ALWAYS** let someone know of your timetable and primary and alternate routes.

Heavy snow can immobilize a region and paralyze a city, even disrupting emergency and medical services. Exposure to cold can cause frostbite or hypothermia and become life-threatening, especially for infants and the elderly. Water pipes may freeze and burst in homes that are poorly insulated or without heat.

Injuries Related to Cold

* *50% happen to people over 60 years old*
* *More than 75% happen to males*
* *About 20% occur in the home*

Listen For These:

Outlook: *Winter storm conditions are possible in the next 2-5 days. Stay tuned to local media for updates.*

Watch: *Winter storm conditions are possible within the next 36-48 hours.* ***Prepare Now!***

Warning: *Life threatening severe weather conditions have begun, or will begin within 24 hours.* ***Act Now!***

Advisory: *Winter weather conditions are expected to cause significant inconveniences and may be hazardous. If you are cautious, these situations should not be life-threatening.*

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Hydrology

By: Michael McLane, Science & Operations Officer

Assessing 2003 Precipitation - How Wet was it?

Most eastern Kentucky residents would not argue the fact that 2003 has been a wet year. Heavy rain in February resulted in widespread flooding across the Kentucky coal fields, with locations in the Kentucky River Basin having flood crests the highest they'd been since the 80's. Additional heavy rain in April resulted in another flood event for both the Cumberland and Kentucky River basins. Soil conditions remained wet for much of the first few months of the year, hindering farmers with planting crops. Though river flooding stopped with the end of spring rain, flash flooding was a frequent occurrence hrough much of the summer, due to an abundance of convective, heavy rain-producing storms moving across the region.

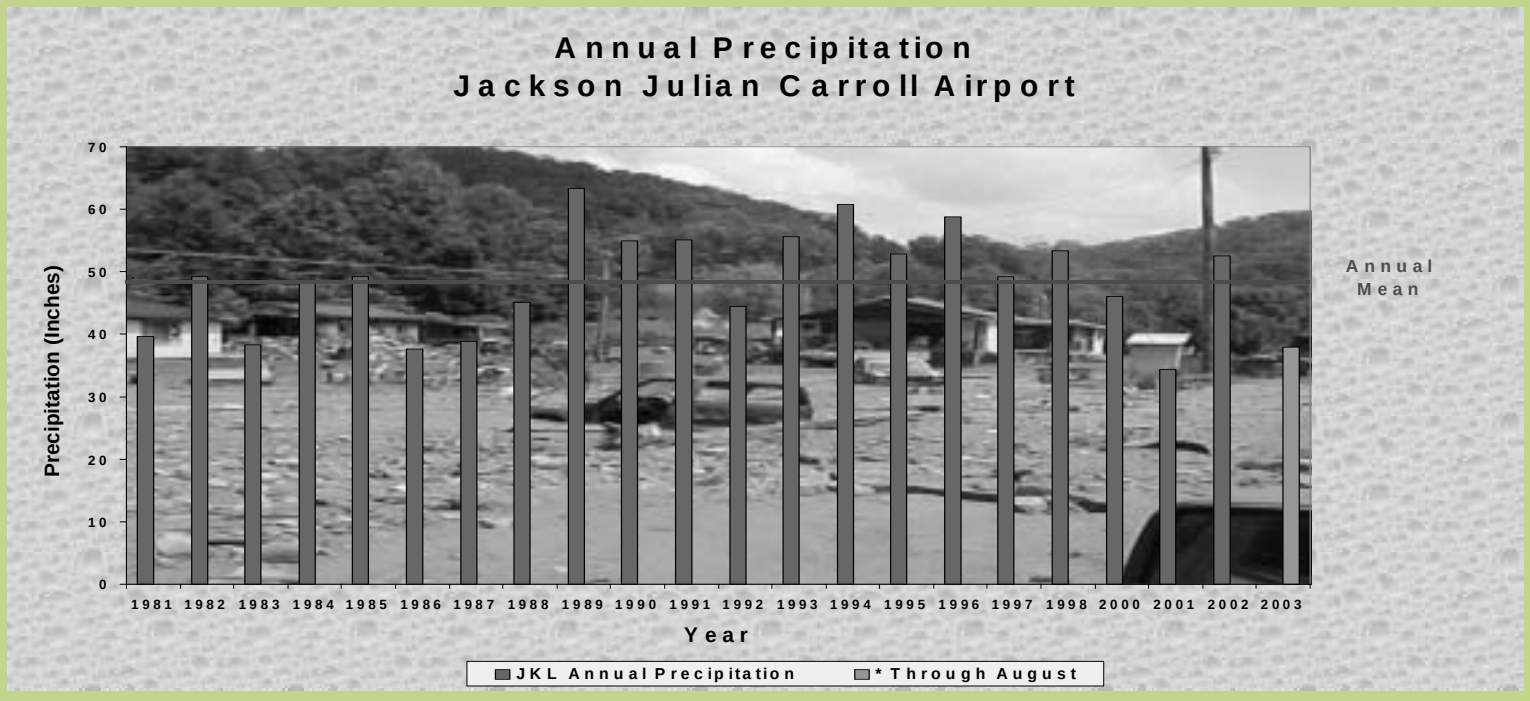
The facts seem to speak for themselves. The year 2003 has been a wet year, but how has this compared to years past? Digging back through the climatological records for Jackson's Julian Carroll Airport (JKL) provided a bit of insight. Through the end of August, rainfall for 2003 was just under 38 inches. This is the highest total for this same period since 1998, when 40.5 inches was recorded. Since 1990, more rain has been recorded in five of the past 13 years, compared to 2003. The driest Jan-Aug was 2001, when 26 inches fell. The wettest was 1993, which had over 44 inches.

What will the remainder of 2003 bring? September through December is normally the driest time of the year for eastern Kentucky. Climatological records for JKL indicate 14.93 inches is received on the average during the last third of the year, or about 30% of the annual precipitation total. The National Weather Service Climate Prediction Center's official 90-day outlook indicates there is an equal chance of above or below normal precipitation for the Bluegrass State for the period September through November. Should normal precipitation occur during September through December the year will end with a grand total of around 53 inches. This would put 2003 into the record books as the eighth wettest year since records were begun at the Julian Carroll Airport, in 1981.

Actual rainfall during the remaining months of this year could be greater or less, depending on the location and persistence of large scale atmospheric patterns that establish over the hemisphere and around the globe. Scientists have discovered that these circulations are affected by the El Nino / Southern Oscillation (ENSO). The ENSO cycle refers to the coherent and sometimes very strong year-to-year variations in sea-surface temperatures, convective rainfall, surface air pressure, and atmospheric circulation that occur across the equatorial Pacific Ocean. El Niño and La Niña represent opposite extremes in the ENSO cycle. El Niño refers to the periodic warming of sea-surface temperatures across the east-central equatorial Pacific, while La Niña is at the other end of the spectrum and refers to the periodic cooling of sea-surface temperatures. Both abnormally warm and cold sea-surface temperatures can affect the intensity and position of the jet stream, which in turn affects the development and movement of storm systems. Current atmospheric and oceanic conditions in the tropical Pacific are near average and do not support the development of either La Niña or El Niño in the next few months.

One other factor to consider though is tropical storms. Fall is on the tail end of the tropical storm season, however, storms have developed in the past in September and October and tracked close enough to produce heavy rain over eastern Kentucky. Such was the case with Hurricane Hugo in 1989.

Soooooooooo...how will 2003 stack up with years past? Time will tell, however, when all is said and done it will probably go in the record books as wetter than normal. Additional hydrological and climatological data can be found on the Jackson National Weather Service's Homepage at: http://crh.noaa.gov/jkl.



The Eloquence of Ice

By: Dean Henson, COOP Observer

Ice is a study in contrasts. It is fragile, yet powerful. It is both subtle and treacherous, inspiring but limiting. It is responsible for a detested variety of frozen sufferings and disappointments--home confinement, power outages, frozen pipes, impassable roadways, treacherous sidewalks, inflated heating bills, fender benders, hypothermia and frostbite.

If spring is embraced as a deliverer of sweet peace, then winter is often scorned as a hateful tormentor. The abruptness and harshness of the arrival of winter's ice is akin to being returned to a strict father after a weekend at grandma's.

Sometimes winter storms are accompanied by strong wind, creating blizzard conditions with blinding, wind-driven snow and severe drifting. Extreme cold often accompanies a winter storm, resulting in dangerous wind chill. Heavy snow can immobilize a region and paralyze a city, stranding commuters, stopping the flow of supplies and disrupting emergency and medical services.

In rural areas, homes and farms may be isolated for days. Everyone is potentially at risk for some measure of inconvenience in the winter months, especially during icy winter storms.

Snow is disliked by many for the disruption it usually causes, but ice is regarded even worse. Ice storms begin as freezing rain and leave a coating of clear ice on all exposed surfaces. They transform roadways into giant skating rinks and leave downed power lines and broken trees in their wake.

The overhead lines of power and communication systems are perhaps hardest hit by ice. The hanging wire cables collect ice until either the cables break or the rain stops. Ice coating such cylindrical cables may reach two inches in diameter adding 10-20 pounds per foot to the wire. Lines that are not broken directly under the weight of the ice will often succumb to the combined forces of accumulated ice and wind, or by the trees that fall across them. Even days after the storm has abated, lines may break as they react to sudden load changes as ice falls from them in thawing sunlight. Violent whipping sometimes occurs as the ice drops off, ripping the lines from attachment points under the added strain.

Freezing rain, however, affects more than just human technology. Animals and plants also suffer during periods of ice accumulation. Like electrical cables, tree branches also collect weighty volumes of ice. While conifers are fairly resistant to ice damage owing to their flexibility, tapered shape, and lack of branching trunks; deciduous trees exhibit a wide range of vulnerabilities to ice. In general, younger deciduous trees are better able to survive the onslaught of ice than older ones due to their more supple character and limited branching. Multiple large branches in a tree generally lead to increased breakage; heavy ice accumulation on multi-branched trunks may even cause a tree to split in two.

Active winter animals, too, must cope with icy calamity. Many starve when unable to reach seeds, buds or other food locked in the ice. Browsing becomes difficult for deer when forage becomes encased. Birds unable to find sheltered perches during the storm sometimes find their feet frozen to the very branches on which they sit, leaving them unable to fly and overly exposed to the wiles of winter. Grouse buried cozily in snowdrifts often unwittingly become entombed by an overriding ice layer and suffocate.

Yet, from another perspective, snow and ice are magical. They posses the power to transform familiar localities into surreal landscapes making them to appear strange and foreign. They can temporarily turn an ordinary patch of woods into a glistening, pristine wonderland by enveloping everything in a crystal sheath. Winter's biting cold turns hills and meadows frosty white and brings us ice and snow to play with and wonder at, despite its forbidding demeanor.

In heavy snowstorms, old man winter passes a smoothing hand over the earth causing us to have feelings of peacefulness and tranquillity. Therefore, dazzling beauty often tempers the damage and inconvenience of heavy ice deposits.

In the aftermath of a winter's night ice storm, dawn sometimes breaks with the sun's brilliance reflecting and refracting over the crystalline garden that covers the countryside. Barbed wire fences sparkle like diamond necklaces and weeds solemnly stand like the gleaming stems of crystal goblets.

Gentle wind tinkles tree branches like wind chimes, sometimes breaking long ice chains and sending them crashing dramatically to the ground.

While a forest walk after an ice storm gives the impression of widespread devastation amid hazardous beauty, a heavy accumulation of ice also performs vital services.

The same cataclysmic action that downed power lines also releases seeds, encourages regeneration, prunes dead or dying branches and indirectly provides new nesting and sleeping cavities for birds and other animals. As is so often the case, the destructiveness or usefulness of natural events is dependent upon the perspective taken. And, as is typical of natural phenomena, the elemental forces of nature occasionally conspire to both hinder and help in a single wondrous act, leaving us to contemplate its ways and purposes

Fire Weather

By: Jonathan Pelton, Lead Forecaster

Fire Weather Parameters Part Two: Wind

You may have heard the television weathercaster say the wind is out of the north at 5 miles per hour. You can feel the winds blowing on your face and you know it is there, but what exactly is wind and how does wind affect wildfires. Wind can be defined as the horizontal movement of air, relative to the surface of the earth. You could compare wind to water flowing in a stream. When it comes to fire weather, there are two types of wind that can combine or act alone to affect fires and determine what tactics firefighters will use to fight a fire. They are the general wind and local wind.

The general wind is the result of wind flowing from high pressure toward lower pressure. Wind blows clockwise around high pressure and counterclockwise around low pressure in the Northern Hemisphere. When the general wind is weak, the local wind can play a large role in fire spread. Local wind results from local temperature differences. Terrain plays a large role in the local wind and the steeper and more varied the terrain is, the larger role that the local wind plays in the overall wind. In areas of steep terrain such as eastern Kentucky, upslope and downslope wind are the most important and common local winds. Upslope wind occurs during the day and is strongest during the afternoon hours. They result from warm air on the ridgetops rising and being replaced by cooler air in the valleys. This creates an upslope wind during daytime heating. Upslope wind is generally turbulent and erratic and varies in speed. Downslope wind occurs at night, is shallow, and are the result of gravity. Cooler, denser air from ridges flows downhill and settles in valleys during downslope wind.

The overall wind can affect forest fires in several ways. This is especially true when upslope wind and the general wind both blow out of the same direction and can combine to be stronger than either the local wind or general wind. Wind helps to dry out potential fuels such as grass or sticks by speeding up evaporation. Once a fire has started, wind aids combustion by increasing the supply of oxygen to the fire. Wind directly affects spotting, which is the spread of a fire by carrying heat and burning embers to new fuels out ahead of the main fire. Strong wind can bend the flames in the direction of unburned fuels, preheating them, which dries them out and makes them ignite easier. This is especially true in steep terrain. Strong wind can bend flames and lead to rapid uphill runs. However, the direction that a fire spreads is generally determined by wind direction alone. Light west wind for example, would generally spread a fire to the east. However, stronger westerly winds would also spread a fire farther to the east.

Several weather parameters are critical to fire suppression efforts. Wind speed and direction, combined with other weather parameters, are used by land management agencies in planning fire suppression and staffing levels. This information helps land management agencies determine which fire suppression tactics will be safe and effective.

News from the COOP

David Stamper, Data Acquisition Program Manager

Those of you that call us on a regular basis have probably recognized a new voice. That voice is Mr. Charlie Mott. Charlie came to us all the way from San Diego, California. I went way out on a limb when hiring Charlie, because he is a retired Navy Weather Man. Air Force Weather Men/Women are preferred and for the most part are more intelligent than the other branches of service. Just Kidding. Charlie came here with tons of weather forecasting experience and has been a great addition to our staff. Unfortunately, Charlie's employment here is only for a one-year period. Charlie was hired to fill in for Jason Moran when he was recalled for Operation Iraqi Freedom. Charlie is a fine person and is a welcomed addition to our staff. Hopefully, Charlie will get a permanent position with the National Weather Service. Make sure you welcome him when you call in the mornings.

I am very sad to pass on to you that a long time Cooperative Weather observer has passed on. Mrs. Nora Meade from Wallingford in Fleming County recently passed away. Nora was a weather observer for many years, and was a retired school teacher. Nora lived on a very nice farm in Fleming County and it was always a special treat for me to get to visit with her. Our deepest sympathies go out to the Meade Family.

Also, Mr. Roy Abbott in Somerset has retired. Roy has been a COOP Weather Observer in Somerset for a little more than 40 years. Roy still resides in Somerset and I look forward to visiting him in the future. Roy is also a Holm Award winner recognizing him as one of the best cooperative observers.

Please make sure that you write your data down on the same day you are taking the readings. Recently, we began entering your data into a spread sheet each and every day. This enables us to instantly look and see how much rainfall you have had. When we get your forms in the mail, we check the forms against our spreadsheet. When doing this, we noticed that many observers are logging their data down on the wrong day. Remember...log the data on the same day you are taking the readings. Also...when we get your forms, we enter any precipitation that you did not phone in. Some observers are not doing a very good job of giving the data to the National Weather Service.

It is **very important** that our Cooperative Observers relay their weather reports to the National Weather Service **each and every day**. These reports are used in our computer models, which enable us to issue more accurate forecasts. If we do not receive your reports by 9 AM, the data does not make it into the system. If you have a computer at home and have internet access, Please try out the WXCODER program to enter your data. It is very user-friendly and helps eliminate many errors in the transmission process. If you are not on the internet, continue to phone-in your reports to the ROSA Computer, or to the Weather office in Jackson.

Be seeing you soon, Dave

Storm of the Season

By: Phil Hysell, Warning Coordination Meteorologist

If one asks most residents of southeastern Kentucky to describe the summer of 2003, the word "wet" would probably be mentioned most. At the National Weather Service in Jackson, we have received over 100 reports of flash flooding this year, which is a record number! Perhaps the most widespread flooding occurred from June 14th through June 17th, when we issued 53 flash flood warnings. Localized heavy rain began on June 11th, then became more widespread and persisted every day through the 17th. As the ground become more saturated, runoff increased and the flooding worsened. Pike County reported over 225 homes with flood damage, had 2.8 million dollars in damage from the flooding county-wide. In Floyd County, 1.2 million dollars in damage occurred.

Rainfall totals from June 12th through the 17th ranged from 2 to 6 inches. One rain gage in Knott County, in the Bill D. Branch area, totaled 5.89 inches!

Pitcure provided by Eric Thomas

Across eastern Kentucky, 23 counties were declared disaster areas by FEMA, with over 6.5 million dollars in assistance provided.

While no deaths were directly attributed to the flash flooding in our County Warning Area, one fatality did occur very close. A six-year-old girl was killed on the 14th of June along the Estill/Madison county line after the driver of the car (the car contained the girl, her mother and another adult) attempted to cross a water covered bridge. Once the driver realized she could not cross the bridge, she attempted to back up, but the car was swept into a creek. The two adults were able to escape. This tragedy is a somber reminder that flash flooding is the number one weather related hazard in Kentucky.

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3rd Annual Customer/Partner Workshop

By: Phil Hysell, Warning Coordination Meteorologist

...NWS Jackson Hosts Third Annual Customer-Partner Workshop...

On Wednesday September 17th, the National Weather Service in Jackson hosted their third annual Customer-Partner Workshop. A group of 25 people, representing radio stations, schools, Department of Transportation, 911, Emergency Management, U.S. Corps of Engineers, and COOP observers attended this workshop.

Meteorologist-In-Charge, Shawn Harley, opened the workshop by providing an overview of operations, as well as informing the group about changes that were made at our office based on feedback from last year's Customer-Partner Workshop. Some of these changes included: adding a broadcast schedule for NOAA Weather Radio to our webpage; shortening the call-to-action statements at the end of warnings, which allows the media to disseminate more warnings in a shorter period of time; and adding more specific information to flash flood warnings using a new tool called FFMP which is discussed in Shawn Harley's article on page one of this newsletter.

After a presentation about how we prepare forecasts, guest speaker Doug Tackett, Pike County Emergency Manager, talked about the steps necessary to make your county StormReady. As of this writing, eleven counties in Kentucky are "StormReady". To learn more about the National Weather Service's StormReady program, visit this website: http://www.stormready.noaa.gov/. Jim Mercer, Chief Engineer at Clear Channel Radio in Somerset, then talked about severe weather operations at Clear Channel Radio.

After lunch, Hydrometeorological Technician Bonnie Terrizzi lead a discussion about alarms and alerts on NOAA Weather Radio. Those in attendance were able to provide input on whether certain products issued by our office should be alerted or alarmed.

Science and Operations Officer Mike McLane described the tools we use to issue flash flood warnings, and then surveyed the crowd about the definition of a flash flood. Lead Forecaster Jon Pelton provided some background information about our Fire Weather Program, then Warning Coordination Meteorologist Phil Hysell discussed the definitions of advisories and warnings issued by our office. Participants were asked whether these advisories or warnings needed to be changed or issued more or less frequently. Finally, Phil discussed the importance of verifying our warnings and the perception of false alarms.

The National Weather Service in Jackson wants to thank those that took the time and energy to attend our workshop. If you were not able to attend our workshop, we still would like to know how you feel about the products and services we provide. Please give us a call (606-666-8000), drop us an e-mail via our web site (www.crh.noaa.gov/jkl), or write us (1329 Airport Rd. Jackson, KY 41339) if you have any ideas or suggestions.

Kid's Corner

By: Ed Ray, General Forecaster

What is air pressure? Air pressure is the weight all of the air, the air above and around you, pushing against your body. But, why don't we feel the air pushing against us? Because we are so accustomed to the push of the air against us, we don't even realize it. Actually, air pressure is a very strong force and could crush you except for the fact that you have air inside your body pushing back out. How can we see this pressure? Well, the following experiment can be used to "see" air pressure, or at least to see the effects air pressure can have on our bodies.

CAUTION: This experiment requires the use of hot water and an adult should be present at all times in order to prevent getting burned when performing this experiment.

For this experiment you will need:

- *An empty aluminum can*
- *Hot water (boiling water is best, but very hot tap water from the sink may work as well.*
- *A styrofoam plate (the type you use at picnics-- similar to a paper plate.)*
- *Cool tap water*
- *A common kitchen pot holder*

Directions: ***Place the styrofoam plate on a flat surface such as the kitchen table. Pour some cool tap water onto the plate so that the level is high enough to cover the lip (or edge) of the aluminum can if it were placed upside down in the water. Have an adult place 2 to 3 tablespoons of hot water into the aluminum can and let it sit for about 3 seconds. (Use the pot holder when handling the hot water and can in order to avoid burns.) Place the aluminum can upside down into the cool water in the styrofoam plate so that no air can get into the can. Watch what happens! The aluminum can should collapse.***

Why did the can collapse?

Well, when you place the hot water into the can, the water vapor, or steam from the hot water (just like steam rising from a pan of boiling water) pushed much of the air out of the can. After the can was placed into the cool water in the styrofoam plate, the steam inside the can began to cool, dripping back into the water in the styrofoam plate. This leaves little in the way of air or steam inside the can -- the can now has less air inside compared to outside, meaning the air pressure inside the can is less than the air pressure outside the can. Consequently, the force of the higher pressure outside the can pushed into and crushed the aluminum can.